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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,434	01/11/2002	Peter A. Warren	FM-169J	9313

7590 07/14/2004
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260 Bear Hill Road
Waltham, MA 02451-1018

EXAMINER

A, PHI DIEU TRAN

ART UNIT	PAPER NUMBER
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3637

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,434

Applicant(s)

WARREN, PETER A.

Examiner

Phi D A

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-40 and 43-71 is/are rejected.
- 7) ☒ Claim(s) 41 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/18/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/18/04 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22-40, 43-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell (5924745) in view of Hedges (3818948).

Campbell(figures 3-4) shows a collapsible structure having a foldable member comprising at least a first tube, at least one predetermined hinge area along the length of the first tube, a plurality of opposing elongated slots (12b) in the tube forming separated longitudinal strips of layers of tube material between the slots which fold when subjected to localized buckling forces (inherently so), a plurality of opposing sets of slots, at least four slots, one set of two slots opposing another set of two slots, each slot of each set of elongated slots separated longitudinally along the length of the tube from each adjacent slot by a bridge element of tube material (figure 1), the slots are diametrically opposed from each other on the tube, each set of

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slots being diametrically opposed from a slot in the opposing set of slots, slots reinforcing members disposed in the slots (the reinforcing members are the bridges), a plurality of sets of slots with multiple slots in each set, stress relieving member (the opening on the inside of the tube next to the bridge member which relieves stress on the bridge member; claim has not specified the relieving member yet), each slot having a reduced diameter portion, a second tube (figure 3, the top tube being second tube) disposed inside the first tube, the second tube including opposing sets of elongated slots at the hinge area thereof.

Campbell does not show the tubes being made of layers of material, the first tube including a sheet of plastic material wrapped around itself several times forming the layers of tube material, an adhesive securing the layers of plastic material to each other at selected locations along the length of the tube, the adhesive being a tape, the sheet of plastic material comes from a roll of plastic stock material and has a round memory, the layers of material are laminated to each other except at the predetermined hinge area, the tube being made of composite material, the composite material including a triaxial braid of fibers in a resin matrix, the slots being triangle shaped.

Hedges shows a tubular member formed of layers of material, the material being a composite material (col 2 lines 38-41), the layers of material being connected together with an adhesive tape (32, 34).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Campbell to show the tubes being made of layers of material, the first tube including a sheet of plastic material wrapped around itself several times forming the layers of tube material, an adhesive securing the layers of plastic material to each other at selected

locations along the length of the tube, the adhesive being a tape as taught by Hedges, the sheet of plastic material comes from a roll of plastic stock material and has a round memory, the layers of material are laminated to each other except at the predetermined hinge area, the tube being made of composite material, the composite material including a triaxial braid of fibers in a resin matrix because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice, In re Leshin, 125 USPQ 416, and the fact that it is a matter of obvious design choice is further illustrated by applicant's claims to the material being plastic or composite, and it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Campbell's structure to show the slots being triangle shaped as triangle, square, rectangular and oval are well known slot shapes.

Allowable Subject Matter

3. Claims 41-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: prior art does not provide sufficient motivation to modify Campbell to show at least one transducer device located proximate a hinge area or an electrical conductor disposed in the tube in combination with other claimed limitations.

Response to Arguments

5. Applicant's arguments with respect to claims 22-71 have been considered but are moot in view of the new ground(s) of rejection.

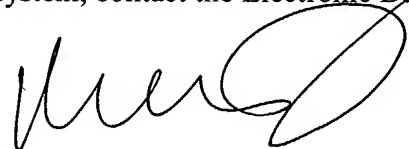
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art shows different collapsible tubular designs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phi D A whose telephone number is 703-306-9136. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai can be reached on 703-308-2486. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phi Dieu Tran A

7/7/04